



Department of Commerce

Safety & Buildings Division

201 West Washington Avenue

P.O. Box 2658

Madison, WI 53701-2658

Evaluation # 200255-I (Replaces 200067-I)

Wisconsin Building Products Evaluation

Material

Insulated Roof Sandwich Panels
(Isocyanurate Foam Core)

Manufacturer

Hunter Panels, LLC
15 Franklin Street
Portland, Maine 04074

SCOPE OF EVALUATION

GENERAL: This report evaluates the H-Shield, H-Shield Tapered, H-Shield-WF, H-Shield-WF Tapered, H-Shield-P, H-Shield-P Tapered and H-Shield-NB insulated roof sandwich panels, manufactured by Hunter Panels, LLC.

This review includes the cited **International Building Code (IBC)** requirements below in accordance with the current **Wisconsin Amended IBC Code**:

- **Foam Plastic:** The H-Shield, H-Shield Tapered, H-Shield-WF, H-Shield-WF Tapered, H-Shield-P, H-Shield-P Tapered and H-Shield-NB insulated roof sandwich panels were evaluated as a foam plastic building material in accordance with s. **IBC 2603.1, 2603.2, 2603.3, 2603.4.1.5, 2603.5.2 and 2603.6.**

DESCRIPTION AND USE

Descriptions of Roofing Products: Insulation for Roof Construction: Rigid Factory Produced Roof Insulation:

Trade Name:	H-Shield
Thickness:	1.4 - 4.0 inches
Board Size:	3, 4, or 8 x 4 feet
Core:	Isocyanurate Foam
Facers:	Glass fiber reinforced organic felt
Decks:	Concrete (90), Cementitious Wood Fiber, Gypsum, Steel, Re-roofing
Covers:	Glass Felt BUR, Organic Felt BUR, Polyester Felt BUR, Mechanically Attached and Fully Adhered

Special Application:	<p>Single-ply, Modified Bitumen</p> <p>Tapered or flat boards. Multi-layer systems have first or second layer of H-Shield, tapered or flat, followed by a top layer of H-Shield, tapered or flat. Maximum total thickness of 12-inches. Minimum thickness of single layer or bottom layer of multi-layer of 1.4-inches. All layers are mechanically fastened through the top layer. Bottom layer may be adhered with hot asphalt applied at 25 lb./sq., or Insyt-Stik Roofing Adhesive applied in continuous 3/4 to 1-inch wide beads 12-inches on-center to a substrate [structural concrete only] or, mechanically fastened with subsequent layers adhered with hot asphalt applied at 25/sq or Insta-Stik Roofing Adhesive applied in continuous 3/4 to 1-inch wide beads 12-inches on-center to substrate. The windstorm classification of multi-layer applications is that of the secured layer (see BUR tables or roof cover listings).</p>
<p>Trade Name:</p> <p>Thickness:</p> <p>Board Size:</p> <p>Core:</p> <p>Facers:</p> <p>Decks:</p> <p>Covers:</p> <p>Special Application:</p>	<p>H-Shield-WF</p> <p>1.9 - 4.0 inches</p> <p>3, 4, or 8 x 4 feet</p> <p>Isocyanurate Foam</p> <p>Fiberboard, 1/2-inch, top, glass fiber reinforced organic felt, bottom</p> <p>Concrete (90), Cementitious Wood Fiber, Gypsum, Steel, Re-roofing</p> <p>Glass Felt BUR, Organic Felt BUR, Polyester Felt BUR, Mechanically Attached and Fully Adhered Single-ply, Modified Bitumen</p> <p>Tapered or flat boards. Multi-layer systems have first or second layer of H-Shield, tapered or flat, followed by a top layer of H-Shield-WF, tapered or flat. Maximum total thickness of 12-inches. Minimum thickness of single layer or bottom layer of multi-layer of 1.9-inches. All layers are mechanically fastened through the top layer or, the bottom layer may be adhered with hot asphalt applied at 25 lb./sq., or Insta-Stik Roofing Adhesive applied in continuous 3/4 to 1-inch wide beads 12-inches on-center to substrate [structural concrete only] or, mechanically fastened with subsequent layers adhered with hot asphalt applied at 25/sq or Insta-Stik Roofing Adhesive applied in continuous 3/4 to 1-inch wide beads 12-inches on-center to substrate. The windstorm classification of multi-layer applications is that of the secured layer (see BUR tables or roof cover listings).</p>
<p>Trade Name:</p> <p>Thickness:</p> <p>Board Size:</p> <p>Core:</p> <p>Facers:</p> <p>Decks:</p> <p>Covers:</p> <p>Special Application:</p>	<p>H-Shield-P</p> <p>1.4 - 4.0 inches</p> <p>3, 4, or 8 x 4 feet</p> <p>Isocyanurate Foam</p> <p>Perlite, 1/2-inch, top, glass fiber reinforced organic felt, bottom Concrete (90),</p> <p>Concrete (90), Cementitious Wood Fiber, Gypsum, Steel, Re-roofing</p> <p>Glass Felt BUR, Organic Felt BUR, Polyester Felt BUR, Mechanically Attached and Fully Adhered Single-ply, Modified Bitumen</p> <p>Tapered or flat boards. Multi-layer systems have first or second layer of H-Shield, tapered or flat, followed by a top layer of H-Shield-P, tapered or flat. Maximum total thickness of 12-inches. Minimum thickness of single layer or bottom layer of multi-layer of 1.9-inches. All layers are mechanically fastened through the top layer or, the bottom layer may be adhered with hot asphalt applied at 25 lb./sq., or Insta-Stik Roofing Adhesive applied in continuous 3/4 to 1-inch wide beads 12-inches on-center to substrate [structural concrete only] or, mechanically fastened with subsequent layers adhered with hot asphalt applied at 25/sq or Insta-Stik Roofing Adhesive applied in continuous 3/4 to 1-inch wide beads 12-inches on-center to substrate. The windstorm classification of multi-layer applications is that of the secured layer (see BUR tables or roof cover listings).</p>
<p>Trade Name:</p> <p>Thickness:</p> <p>Board Size:</p> <p>Core:</p> <p>Facers:</p> <p>Decks:</p> <p>Covers:</p> <p>Special Application:</p>	<p>H-Shield-NB</p> <p>1.9 - 4.0 inches</p> <p>3, 4, or 8 x 4 feet</p> <p>Isocyanurate Foam</p> <p>OSB, 7/16-inch, top,</p> <p>Concrete (90), Cementitious Wood Fiber, Gypsum, Steel, Re-roofing</p> <p>Glass Felt BUR, Organic Felt BUR, Polyester Felt BUR, Mechanically Attached and Fully Adhered Single-ply, Modified Bitumen</p> <p>Multi-layer systems have first or second layer of H-Shield, tapered or flat, followed by a top layer of H-Shield-NB. Maximum total thickness of 12-inches. Minimum thickness of single layer or bottom layer of multi-layer of 1.9-inches. All layers are mechanically fastened through the top layer or, the bottom layer may be adhered with hot asphalt applied at 25 lb./sq., or Insta-Stik Roofing Adhesive</p>

applied in continuous 3/4 to 1-inch wide beads 12-inches on-center to substrate [structural concrete only] or, mechanically fastened with subsequent layers adhered with hot asphalt applied at 25/sq or Insta-Stik Roofing Adhesive applied in continuous 3/4 to 1-inch wide beads 12-inches on-center to substrate. The windstorm classification of multi-layer applications is that of the secured layer (see BUR tables or roof cover listings).

Description of Approved Combinations and Assemblies for use in Approved Combinations:

Roof Cover: Glass, Organic and Polyester Felt BURs
 Decks: Steel, Concrete, Gypsum, Cementitious Wood Fiber, Recover
 Hail Rating: See roof cover listing.
 ASTM E108: See roof cover listing.

Construction #1: Steel, Concrete, Gypsum (Reroof), Cementitious Wood Fiber. Minimum 1.4-inch thick H-Shield or H-Shield Tapered, or minimum 1.9-inch thick H-Shield-WF, H-Shield-WF Tapered, H-Shield-P, H-Shield-P Tapered or H-Shield-NB is mechanically fastened to deck with fasteners and plates applied at 4.0 ft², the maximum contributory area per fastener. An approved minimum 3-ply glass, organic or polyester felt BUR (steel deck requires 3- or 4-ply only) is applied in hot asphalt, coal tar pitch or coal tar bitumen per individual BUR roof cover listings.

Meets Class 1-90.

Fasteners and Plates Steel Deck: Construction Fasteners Dekfast Hex Plate and #12, #14, #15 Heavy Dekfast or Omega fasteners Dekfast #12 Hex Plate and HWH fastener, Dekfast 3-inch Round Insulation Plate and Dekfast Stainless Steel fastener; ITW Buildex Recessed Metal Plate and #14-10, 1/4 diameter. Roofgrip or Hextra fasteners, Accu Trac Plate and Hextra fastener, Flat Bottom Metal Plate and #12, #14-10 Roofgrip or 1/4 diameter Roofgrip fasteners, 3-inch Round Metal Plate and #12 Roofgrip or Hextra fasteners; Olympic Standard Plate and #10, #12 Standard or #14 Heavy Duty, Hex Head #12 Standard or #14 Heavy Duty fasteners, Olympic G-2 plate and #12 Standard or #14 Heavy Duty, Hex Head #12 Standard or #14 Heavy Duty fasteners, Olympic LGP Plate and #12 Standardbor #14 Heavy Duty fasteners, Olympic 3-inch Ribbed Galvalume Plate and Hex Head #12 Standard or #14 Heavy Duty fasteners; Powers Rawl 3-inch Insulation Plate and Rawl #12, #14, Speed-Lock Toggle Bolt fasteners; SFS Stadler Insul-Fixx S Plate and #12-11, #14-10 Insul-Fixx fasteners, IF-3-inch-S Type I Bore Plate and Isofast IF2 fastener, IF-3-inch-S Type II Bore Plate and #12-11, #14-10 Insul-Fixx fasteners; Tru-Fast MP-3 Plate and Tru-Fast TP, Ultra Stainless Steel, DP or HD fasteners, Tru-Fast MPH-3 Plate and Tru-Fast DP-H fastener.

Fasteners and Plates Concrete Deck: Construction Fasteners Dekfast Hex Plate and #14 or #15 Heavy Dekfast fasteners, Dekfast 3-inch Round Insulation Plate and Dekfast Stainless Steel fastener; ITW Buildex Recessed Metal Plate and #14-10 fastener, Flat Bottom Metal Plate and #14-10 Roofgrip fastener; Olympic Standard Plate and #14 Heavy Duty, Hex Head #14 Heavy Duty fasteners, Olympic LGP Plate and #14 Heavy Duty fastener, Olympic 3-inch Ribbed Galvalume Plate and Hex Head #14 Heavy Duty or CD-10 fasteners; Powers Rawl 3-inch Insulation Plate and Rawl Zamic Nailin, Drive, T-Spike, Speed-Lock Toggle Bolt or Lok/Bolt fasteners; SFS Stadler Insul-Fixx S Plate and #14-10 Insul-Fixx fastener, IF-3-inch-S Type II Bore Plate and #14-10 Insul-Fixx fastener; Tru-Fast MPH-3 Plate and Tru-Fast CF, Ultra Stainless Steel or HD fasteners.

Fasteners and Plates Gypsum (Reroof), Cementitious Wood Fiber: Olympic Lite-Deck Plate and Lite-Deck fastener, Olympic N.T.B. Plate and N.T.B. Magnum with 1-inch Head fastener; Powers Powerlite 3-inch Insulation Plate and Powerlite fastener; Tru-Fast TL 3-inch Insulation Plate and TL fastener.

Construction #2: Concrete, minimum 1.4-inch thick H-Shield or Tapered adhered to the deck with hot asphalt applied at a nominal rate of 20-25 lb/sq. Optional additional layers of minimum 1.4-inch thick H-Shield or H-Shield Tapered with staggered joints adhered with hot asphalt applied at a nominal rate of 20-25 lb/sq. A top layer of minimum 1.4-inch thick H-Shield or H-Shield Tapered or minimum 1.9-inch thick H-Shield-WF, H-Shield-WF Tapered, H-Shield-P, H-Shield-P Tapered or H-Shield-NB with staggered joints is adhered with hot asphalt applied at a nominal rate of 20-25 lb/sq. An approved minimum 3-ply glass, organic or polyester felt BUR is applied in hot asphalt, coal tar pitch or coal tar bitumen per individual BUR roof cover listings. **Meets Class 1-270.**

Construction #3: Concrete, minimum 1.4-inch thick H-Shield or Tapered adhered to the deck with Insta-Stik Roofing Adhesive applied in continuous 3/4- to 1-inch wide beads, 12-inches on center. Optional additional layers of minimum 1.4-inch thick H-Shield or Tapered with staggered joints is adhered with Insta-Stik Roofing Adhesive applied in continuous 3/4- to 1-inch wide beads, 12-inches on center. A top layer on 1.4-inch thick H-Shield or H-Shield Tapered or minimum 1.9-inch thick H-Shield-WF, H-Shield-WF Tapered, H-Shield-P, H-Shield-P Tapered or H-Shield-NB Tapered with staggered joints is adhered with Insta-Stik Roofing Adhesive applied in continuous 3/4- to 1-inch wide beads, 12-inches on center. An approved minimum 3-ply glass, organic or polyester felt BUR is applied in hot asphalt, coal tar pitch or coal tar bitumen per individual BUR roof cover listings. **Meets Class 1-120.**

Construction #4: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Multi-layer systems have first or second layer of

H-Shield or H-Shield Tapered followed by a top layer of H-Shield, H-Shield Tapered, H-Shield-WF, H-Shield-WF Tapered, H-Shield-P, H-Shield-P Tapered or H-Shield-NB. Maximum total thickness is 12-inches. Minimum thickness of single layer or bottom layer of multi-layer is 1.4-inches [H-Shield] or 1.9-inches [H-Shield-WF, H-Shield-P or H-Shield-NB]. All layers have staggered joints and are mechanically fastened through the top layer or, the bottom layer may be adhered with hot asphalt applied at 25 lb/sq or, Insta-Stik Roofing Adhesive applied in continuous 3/4- to 1-inch wide beads at 12-inches on center to the substrate [structural concrete only] or, mechanically fastened with subsequent layers with staggered joints and adhered with hot asphalt applied at 25 lb/sq or, Insta-Stik Roofing Adhesive applied in continuous 3/4- to 1-inch wide beads at 12-inches on center to the substrate. The windstorm classification (maximum Class 1-90) of multi-layer applications is that of the secured layer (see BUR tables or roof cover listings).

Roof Cover:	Modified Bitumen Roof Cover Systems
Decks:	Steel, Concrete, Gypsum, Cementitious Wood Fiber, Recover
Hail Rating:	See roof cover listing.
ASTM E108:	See roof cover listing.

Construction #1: Steel, Concrete, Gypsum (Reroof), Cementitious Wood Fiber. Minimum 1.4-inch thick H-Shield or H-Shield Tapered is preliminarily secured. A layer of minimum 1/2-inch thick Armor Board High Density, BP High Strength, ERS Redi-Deck, FM-90 Traffic Top/High Density, Fiber Top C, E, S, GAFTEMP High Density, HP Recovery Board, Roof Insulation Board, High Density Fiberboard, Sturdi-Top, Fiber Base HD1, HD6, Structodek, Armor Board Regular, Esgard, Celotex Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard, Kop-R Wood Fiber, Bildrite Roof Board, Cascades Fiberboard or Cascades High Density Fibreboard with staggered joints mechanically fastened to deck with fasteners and plates per BUR tables. An approved Modified Bitumen roof cover is applied per roof cover listings. For roof covers, fasteners and plates, deck types, fasteners densities, wind ratings, ASTM E108 and hail damage ratings, see individual Modified Bitumen listings. **Meets Class 1-60/1-75/1-90** per individual Modified Bitumen listings.

Construction #2: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Minimum 1.4-inch thick H-Shield or H-Shield Tapered is loose laid. Same wood fiber as Construction #1 with staggered joints preliminarily secured. An approved Modified Bitumen base sheet is mechanically fastened per roof cover listings. An approved Modified Bitumen roof cover is applied. For roof covers, base sheets, fasteners and plates, deck types, fasteners densities, wind ratings, ASTM E108 and hail damage ratings, see individual Modified Bitumen listings. **Meets Class 1-60/1-75/1-90** per individual Modified Bitumen listings.

Construction #3: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Minimum 2.0-inch thick H-Shield or H-Shield Tapered is mechanically fastened to deck with same fasteners and plates as per BUR listings above applied at 4.0 ft² maximum contributory area per fastener. Same wood fiber as Construction #1 with staggered joints is adhered with hot asphalt. An approved Modified Bitumen roof cover is applied. For roof covers, wind ratings, ASTM E108 and hail damage ratings, see individual Modified Bitumen listings. **Meets Class 1-60/1-75/1-90** per individual Modified Bitumen listings.

Construction #4: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Minimum 1.9-inch thick H-Shield-WF, H-Shield-WF Tapered, H-Shield-P, H-Shield-P Tapered or H-Shield-NB is mechanically fastened to deck with same fasteners and plates as per BUR listings above applied at 4.0 ft² maximum contributory area per fastener. An approved Modified Bitumen roof cover is applied. For roof covers, wind ratings, ASTM E108 and hail damage ratings, see individual Modified Bitumen listings. **Meets Class 1-60/1-75/1-90** per individual Modified Bitumen listings.

Construction #5: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Minimum 1.4-inch thick H-Shield or H-Shield Tapered is mechanically fastened to deck with same fasteners and plates as Construction #3 applied at 4.0 ft² maximum contributory area per fastener. Same wood fiber as Construction #1 with staggered joints is adhered with hot asphalt. An approved Modified Bitumen roof cover is applied per roof cover listings. For roof covers, wind ratings, ASTM E108 and hail damage ratings, see individual Modified Bitumen listings. **Meets Class 1-60/1-75/1-90** per individual Modified Bitumen listings.

Construction #6: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Minimum 1.4-inch thick H-Shield or H-Shield Tapered is mechanically fastened to deck with same fasteners and plates as Construction #3 applied at 3.2 ft² maximum contributory area per fastener. Same wood fiber as Construction #1 with staggered joints is adhered with hot asphalt. An approved Modified Bitumen roof cover is applied per roof cover listings. For roof covers, wind ratings, ASTM E108 and hail damage ratings, see individual Modified Bitumen listings. **Meets Class 1-60/1-75** per individual Modified Bitumen listings.

Roof Cover:	Mechanically Fastened Single-Ply Roof Cover Systems
Decks:	Steel, Concrete, Gypsum, Cementitious Wood Fiber, Recover
Hail Rating:	See roof cover listing.
ASTM E108:	See roof cover listing.

Construction #1: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Minimum 1.4-inch thick H-Shield or H-Shield Tapered or minimum 1.9-inch thick H-Shield-WF, H-Shield-WF Tapered, H-Shield-P, H-Shield-P Tapered or H-Shield-NB is prelim-

inarily secured. An approved single ply membrane manufactured by BondCote, Carlisle, Celotex, Centimark, Cooley, Duro-Last, Firestone, GAF, GenFlex, International, JPS Elastomerics, Mute-Hide, Sarnafil U.S.A., Seaman, StaFast or Versico is mechanically fastened. For roof covers, fasteners and plates, deck types, fasteners densities, wind ratings, ASTM E108 and hail damage ratings, see individual Modified Bitumen listings. **Meets Class 1-60/1-75/1-90** per individual Modified Bitumen listings.

Roof Cover: Fully Adhered Single-Ply Roof Cover Systems
Decks: Steel, Concrete, Gypsum, Cementitious Wood Fiber, Recover
Hail Rating: See roof cover listing.
ASTM E108: See roof cover listing.

Construction #1: Steel, Concrete, Gypsum (Reroof), Cementitious Wood Fiber. Minimum 1.4-inch thick H-Shield or H-Shield Tapered is mechanically fastened to deck with same fasteners and plates as per BUR listings above applied at 2.0 ft² maximum contributory area per fastener. An approved reinforced single ply membrane manufactured by BondCote, Carlisle (except B-500 Bonding Adhesive), Celotex, Centimark, Cooley, Duro-Last, Firestone, GAF, GenFlex, International, JPS Elastomerics, Mute-Hide (except Water-Base Bonding Adhesive), Sarnafil U.S.A., Seaman, StaFast (except StaSafe Bonding Adhesive), or Versico is fully adhered. For roof covers, adhesive and application data, ASTM E108 ratings and hail ratings, see individual Fully Adhered Single-Ply listings. **Meets Class 1-90.**

Construction #2: Steel, Concrete, Gypsum (Reroof), Cementitious Wood Fiber. Minimum 1.4-inch thick H-Shield or H-Shield Tapered is mechanically fastened to deck with same fasteners and plates as Construction #1 above applied at 3.2 ft² maximum contributory area per fastener. An approved reinforced single ply membrane same as Construction #1 above is fully adhered. For roof covers, adhesive and application data, ASTM E108 ratings and hail ratings, see individual Fully Adhered Single-Ply listings. **Meets Class 1-75.**

Construction #3: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Minimum 2.0-inch thick H-Shield or H-Shield Tapered is mechanically fastened to deck with same fasteners and plates as Construction #1 above applied at 4.0 ft² maximum contributory area per fastener. An approved reinforced single ply membrane same as Construction #1 above is fully adhered. For applicable adhesive and application data, ASTM E108 ratings and hail ratings, see individual Fully Adhered Single-Ply listings. **Meets Class 1-90.**

Construction #4: Steel, Concrete, Gypsum, Cementitious Wood Fiber. Minimum 1.9-inch thick H-Shield-WF, H-Shield-WF Tapered is mechanically fastened to deck with same fasteners and plates as Construction #1 above applied at 4.0 ft² maximum contributory area per fastener. An approved reinforced single ply membrane same as Construction #1 above is fully adhered. For applicable adhesive and application data, ASTM E108 ratings and hail ratings, see individual Fully Adhered Single-Ply listings. **Meets Class 1-90.**

Insulation and Fastener Table for Approved Glass and Approved Organic Felt Asphalt Built Up Roofs:

Insulation	Thickness (in.)	Deck	CFI	ITW	OMG	RPC	SFS	TRU
Hunter Panles (j)								
H-Shield	1.4	2, 5	[4]	[4]a	[4](a)	[4]	[4](a, y)	[4]
H-Shield	1.4	1, 3	---	---	[4](z)	[4]	---	[4]
H-Shield-WF	1.9	2, 5	[4]	[4]a	[4](a)	[4]	[4](a, y)	[4]
H-Shield-WF	1.9	1, 3	---	---	[4](z)	[4]	---	[4]
H-Shield-P	1.9	2, 5	[4]	[4]a	[4](a)	[4]	[4](a, y)	[4]
H-Shield-P	1.9	1, 3	---	---	[4](z)	[4]	---	[4]
H-Shield-NB	1.9	2, 5	[4]	[4]a	[4](a)	[4]	[4](a, y)	[4]
H-Shield-NB	1.9	1, 3	---	---	[4](z)	[4]	---	[4]

TESTS AND RESULTS

The polyisocyanurate foam plastic core (facers removed), used in the H-Shield panels have a flame spread rating of 25, a smoke developed rating of less than 450, up to 4-inches in thickness and density up to 2.0 pcf, when tested in accordance with the **ASTM E-84** standard. Testing was conducted at Factory Mutual Research Corporation, on September 2, 1998, report #3000873.

Class A fire tests, ballasted and mechanically fastened (Classified as to external fire exposure only), were conducted in accordance with the Test Standard **ANSI/UL 790**, "Tests for Fire Resistance of Roof Covering Materials," (**ASTM E108**, "Fire Tests of Roof Coverings").

The systems are limited to noncombustible roof decks, only spread of flame tests were conducted. Underwriters Laboratories Inc. conducted the tests on February 26, 1999, report #98NK40472.

Fire endurance tests were conducted in accordance with the standard time-temperature curve as described in the "Standard Fire Tests of Building Construction and Materials", **ANSI/UL 263 (ASTM E119, NFPA 251)**, on the H-Shield, H-Shield-WF, H-Shield-P, H-Shield-P and H-Shield-NB panels. Based on the results the following UL Designs can be used: P225, P230, P259, P508, P514, P519, P701, P710, P713, P717, P718, P719, P720, P722, P723, P727, P728, P729, P730, P732, P801, P814, P815, P818, P819, P823, and P828. Underwriters Laboratories Inc. conducted the tests on February 26, 1999, report #98NK22249.

Factory Mutual did testing on the H-Shield, H-Shield-WF, H-Shield-P, H-Shield-P and H-Shield-NB panels. The panels were found to meet the Factory Mutual Research Standard 4450, on October 15, 1999, report #30003392.

LIMITATIONS OF APPROVAL

The interior of the structure must be separated from the insulation boards with a thermal barrier as required by **s. IBC 2603.4** and **s. IBC 2603.5.2**. The systems are limited to noncombustible roof decks, only spread of flame tests were conducted.

This approval will be valid through December 31, 2007, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:

Approval Date: January 14, 2003 By: _____

Lee E. Finley, Jr.
Product & Material Review
Integrated Services Bureau